

ABSTRACT

A vibration control system which comprises an actuator assembly, serves to replace the friction block entirely while improving settling time, or, alternatively, to operate in conjunction with the friction block, providing additional accuracy or speed of operation. In a preferred embodiment of the invention special dynamic modeling techniques are utilized to investigate structural movements and to provide precise motion control.

In another preferred embodiment induced strain actuators are applied to elastic portions of a lithography reticle stage in order to reduce broadband vibration disturbances. Vertical positioning of the stage is accomplished using a PID controller and elastic vibration damping is implemented using a linear quadratic Gaussian controller.